

DOCUMENT RESUME

ED 237 876

CG 017 131

AUTHOR Zalesny, Mary D.; And Others
TITLE Level and Social Environment as Determinants of Perceived Work Environment.
PUB DATE Aug 83
NOTE 18p.; Paper presented at the Annual Convention of the American Psychological Association (91st, Anaheim, CA, August 26-30, 1983). Best copy available.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Employee Attitudes; Employees; Employment Level; *Interior Design; Job Satisfaction; *Offices (Facilities); Predictor Variables; *Social Environment; *Work Environment

ABSTRACT

Both the social and physical aspects of the environment have been examined as causes of work behaviors and attitudes, but recent studies concerning the effect of open plan offices have shown inconsistent results. To assess the relative contributions of organizational level and the social and physical work environment in explaining employee attitudes and perceptions of their work, 420 state government employees were surveyed about their present work environment and their expectations regarding a new work environment. All employees were to be relocated to an office building designed as an open office environment. Regression analyses indicated that social environment was superior to organizational level and the physical environment in explaining perceived job characteristics, involvement, trust, satisfaction, and expectations about the move. Organizational level explained additional variance in job characteristics and involvement. The physical environment was consistently related to satisfaction. These data suggest that investigations of the effects of changes in office design on employee attitudes and behaviors should include measures of the social environment and organizational level in addition to measures of the physical environment. (JAC)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED237876

BEST COPY AVAILABLE

Level and Social Environment
as Determinants of Perceived Work Environment

Mary D Zalesny, Ronnie Kurchner-Hawkins, & Richard V. Farace

Michigan State University

CG 017131

Paper Presented at the 91st Annual Meeting of the American Psychological Association, Anaheim, California, August, 1983.

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

X This document has been reproduced as
received from the person or organization
originating it.
Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official NIE
position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Mary D. Zalesny

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

ABSTRACT

Post occupancy evaluations have yielded inconsistent results concerning the effect of open plan offices on employees' perceptions and behaviors. Knowledge of organizational level and the present social environment may explain some of the past inconsistencies. Four hundred-twenty state government employees, anticipating an upcoming move, were surveyed regarding their present environment. Regression analyses indicated that social environment was superior to organizational level and the physical environment in explaining perceived job characteristics, involvement, trust, satisfaction, and expectations about the move. Organizational level explained additional variance in job characteristics and involvement. The physical environment was consistently related to satisfaction.

INTRODUCTION

Both the social and physical aspects of the environment have been examined as causes of work behaviors and attitudes. Investigations of the formation and maintenance of work groups (Hackman, Note 1; Wells, 1965; Roethlisberger & Dickson, 1939), psychological climate (James & Jones, 1974), and stress and social support (Wineman, 1982) among others, attest to the importance of good personal relationships for the well-being and effectiveness of employees and the organization. Similarly, research dealing with aspects of the physical environment, including type of technology (Woodward, 1965; Mahoney & Frost, 1974), and general working conditions (Kavoussi, Miller & Rezrani, 1978; Tognoli, 1973) suggests that the physical environment influences employee attitudes and behaviors as well (Sommer, 1969, 1972, 1974).

In recent years, the number of studies of the effects of changes in office design on employees has increased substantially as increasing numbers of organizations adopt open-plan type office design (Goodrich, 1978; Kubzansky, Note 2). Proponents of open design claim that it results in lower operating costs, better working conditions, increased communications, and greater work efficiency (Kubzansky, Note 2; Duffy, 1969; Pile, 1976; AIA, 1977). Research of open design, however, has not consistently supported these claims (Allen & Gerstberger, 1973; Becker, 1981).

One explanation for the inconsistent results is that employee organizational level is not accounted for. Employee responses are often aggregated across employee level or are unspecified (see, for example Brookes & Kaplan, 1972 and Oldham & Brass, 1979). Yet research indicates that organizational level can affect employee perceptions of their jobs (Hackman & Oldham, 1976; Fitzgerald & Schmitt, Note 3) and of their work environments (Goodrich, 1978).

OBJECTIVES

The present study was undertaken in an effort to assess the relative contribution of organizational level, and the social and physical environment at work in explaining employee attitudes and perceptions of their work. Little work has been done on the effect of the present environment in explaining attitudes and perceptions before an environment changes. This study represents an evaluation of the present work environment. It is hypothesized that knowledge of organizational level will contribute significantly in explaining the variance in employee attitudes and work perceptions beyond the contributions of perceptions of the social and physical environment.

METHOD

A sample of 472 employees was drawn from 14 departments of a midwestern state government agency. Departments within the agency were selected randomly and were sampled as intact units. Employees were surveyed about their present work environments and their expectations regarding a new work environment. Usable surveys were returned from 420 employees; 61% were from females. Job and organizational tenure averaged 5.3 years (S.D. = 4.6 years) and 8.2 years (S.D. = 6.0 years) respectively.

At the same time of the study, the agency employed 1100 people who were housed in 15 different geographic locations in the area. The offices ranged from traditional to partially open in design. All employees were to be relocated during the year into one office building that had been designed as an open office environment.

Measures. The independent variables were organizational level, and the social and physical environment. Level was defined by civil service classification. The first level (clerical) was represented by clerical and secretarial staff (N=197). The second level (professional) consisted of lower level managers and nonmanagerial professional employees (N=150); the third level (managerial) was composed of upper level managers (N=73).

Items measuring physical environment were adapted from those used by Goodrich (1978) and modified to better fit the present sample. These items measured the adequacy of lighting, work space size, temperature, equipment and distance from work-relevant others and other facilities. Items measuring social environment were developed from interviews that had been conducted earlier with agency employees. These included ease of communication in the service area, feelings of group membership, enjoying the company of group members, and the perceived level of quarreling among the members of the group.

Seven items, also from Goodrich, measured visual and acoustical privacy.

Dependent variables were: perceived job characteristics, job and organizational involvement, trust in management, job satisfaction and expectations about the move. Job involvement was measured using the short form of the Central Life Interest Inventory (Dubin, 1956). Two items measuring the importance of the organization for the individual were used to assess organizational involvement. Job characteristics were measured using items from the Job Characteristics Inventory (Sims, Szilagyi & Keller, 1976). Trust and satisfaction were measured using items from the Michigan Organizational Assessment Questionnaire (Seashore, 1964). Expectations about the move assessed whether the move was of not concern, aroused anxiety, or was looked forward to by the employee. Related items were summed into scales; levels of internal consistency for the scales, shown in Table 1, were considered adequate.

Insert Table 1 about here

RESULTS

The data were analyzed first using multivariate procedures in order to control for the moderate collinearity among the variables as shown in Table 1. Table 2 presents the results of a canonical variate analysis examining the contributions of level and the environment in explaining the variability within the dependent variable set.

Insert Table 2 about here

The canonical correlation for two significant variates was .45 ($p < .01$). Table 2 shows the correlations between the canonical variates and the dependent and independent variables. The first canonical variate for the dependent set is defined primarily by trust and satisfaction, and secondarily by the majority of the job characteristics items and involvement; the second variate is defined by unpredictability, variety, significance and freedom in one's job. The first variate for the independent set is characterized primarily by the social and physical environment; the second variate reflects organizational level.

Univariate tests of the independent variable regression weights showed that organizational level was significantly related to job unpredictability, significance, freedom, variety and interdependence, job and organizational involvement. Social environment was related to job unpredictability, impact, feedback, freedom, variety and interdependence, job and organizational involvement, trust, satisfaction, and expectations about the move. Physical environment was related to satisfaction.

The contribution of the environment, in particular the social environment, and organizational level in explaining variability in the dependent measures is evident from these results. However, because of the limited interpretability

of the results of canonical variate analysis in identifying the unique contributions of variables, additional analyses were performed to examine these relationships more closely. For this purpose, the sample was separated first by service area and then by location. Service area was chosen because the items measuring social environment referred to one's service area. Separate hierarchical multiple regressions analyses were conducted for areas and locations with more than 30 employees. The variables were entered into the equation in the following order for each analysis: social environment, organizational level, and physical environment (including privacy). For these analyses, job characteristics were summed into a single measure ($\alpha = .89$).

Table 3 shows the results of the analysis by service area. For the areas tested, social environment accounts for a substantial portion of the variance in job characteristics, job involvement, trust and satisfaction. Inclusion of level, however, significantly increases R^2 in job characteristics and reported job involvement. The contribution of the physical environment on reported satisfaction is evident when the data are analyzed by location. Table 4 shows that whereas the social environment and organizational level do not consistently account for variability in the dependent measures, the physical

Insert Tables 3 & 4 about here

environment is consistently related to satisfaction for all locations. These results also give additional evidence for the contribution of level in accounting for the dependent measures.

DISCUSSION

The hypothesis that organizational level would significantly increase the amount of explained variance in employee job perceptions and attitudes over that explained by the social and physical environment was partially supported. Organizational level explained additional variability in the dependent measures after the social environment had been accounted for. An unexpected finding was the strength of the social environment. Multivariate and univariate analyses indicated that aspects of the social environment were more strongly related to overall job and organizational variables than either level of the physical environment.

From the results of the hierarchical analyses, it appears that differences in social environment and level can explain differences in perceptions of the job and the work environment. Inclusion of these variables may help to explain some of the inconsistent results found in studies of office design. These data suggest that investigations of the effects of changes in office design on employee attitudes and behaviors should include measures of the social environment and organizational level in addition to measures of the physical environment in their assessment of both the old and the new environment.

Reference Notes

1. Hackman, J.R. The design of self-managing work groups. Technical Report No. 11, School of Organization and Management, Yale University, 1976.
2. Kubzansky, P.E. Optimizing open office environment: A symposium. Presented at the 13th International Conference of the Environmental Design Research Association, College Park, MD, April, 1982.
3. Fitzgerald, M.P. & Schmitt, N. Organizational size, work group size, socioeconomic status, and perceived job characteristics. Paper presented at the meeting of the Midwestern Psychological Association, Chicago, May, 1979.

References

- AIA Journal. The pros and cons and future prospects of open landscaping.
AIA Journal, 1977, 66, 47-82.
- Allen, T.J. & Gerstberger, P.G. A field experiment to improve communications in a product engineering department: The nonterritorial office. Human Factors, 1973, 15, 487-498.
- Becker, F.D. Work space: Creating environments in organizations. New York: Praeger, 1981.
- Brookes, M.J. & Kaplan, A. The office environment: Space planning and effective behavior. Human Factors, 1972, 14, 373-391.
- Dubin, R. Industrial workers' worlds: A study of "Central Life Interest" of industrial workers. Social Problems, 1956, 3, 131-142.
- Duffy, F. Role and status in the office. Architectural Association Quarterly, 1969, 1, 4-13.
- Goodrich, R. Office environment POE: A dialogue with R. Goodrich. Man-Environment Systems, 1978, 8, 175-190.
- Hackman, J.R. & Oldham, G.R. Motivation through the design of work. Organizational Behavior and Human Performance, 1976, 16, 250-279.
- Kavoussi, N., Miller, H.J. & Rezrani, A. The effects of unsatisfactory working conditions on the epidemiology of unauthorized absenteeism in an old textile factory in Isafan, Iran. Journal of Human Ergology, 1978, 7, 81-87.
- James, L.R. & Jones, A.P. Organizational climate: A review of theory and research. Psychological Bulletin, 1974, 81, 1096-1112.
- Mahoney, T. & Frost, P. The role of technology in models of organizational effectiveness. Organizational Behavior and Human Performance, 1974, 11, 127-138.

- Oldham, G. & Brass, D. Employee reactions to an open-plan office: A naturally occurring quasi-experiment. Administrative Science Quarterly, 1979, 24, 267-284.
- File, J. Interiors Third Book of Offices, Whitney Library of Design, New York: Watson-Guptill, 1976.
- Rodgers, S.G. Open-plan office: Yes or No? Interior Design, 1974, 45, 157-161.
- Roethlisberger, J. & Dickson, W. Management and the worker. Cambridge, Mass.: Harvard University Press, 1939.
- Seashore, S.E. Assessing organizational performance with behavioral measurements. Ann Arbor, Michigan, Michigan Foundation for Research on Human Behavior, 1964.
- Sommer, R. Personal space: The behavioral basis of design. Englewood Cliffs, NJ: Prentice-Hall, 1969.
- Sommer, R. Design awareness. San Francisco: Rinehart Press, 1972.
- Sommer, R. Tight spaces: Hard architecture and how to humanize it. Englewood Cliffs, NJ: Prentice-Hall, 1974.
- Tognoli, J. The effects of windowless rooms and unembellished surroundings on attitudes and retention. Environment and Behavior, 1973, 5, 191-201.
- Wineman, J.D. Office evaluation research: Issues and applications. Paper presented at the Center for Building Technology Federal Workshop Series on Building Science and Technology. National Bureau of Standards, February, 1981.
- Wineman, J.D. The office environment as a source of stress. In G.W. Evans (Ed.), Environmental stress, New York: Cambridge Press, 1982.

Table 1
Internal consistencies, Means, Standard deviations
and
Correlations among Dependent and Independent Variables^a

Scale	# of Items	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Level																			
2. Social Env.	6	26.9	8.06	21	(83)														
3. Physical Env.	7	33.0	7.70	21	57	(72)													
4. Job Involvement	3	11.4	3.95	25	26	19	(78)												
5. Org. Involvement	2	11.7	2.21	21	22	10	54	(67)											
6. Trust	3	11.4	4.23	08	51	21	32	31	(77)										
7. Satisfaction	3	16.3	4.04	17	46	26	55	58	36	(87)									
8. Expectations	3	10.7	3.30	-06	16	-03	-05	-07	15	01	(21)								
9. Unpredictability	2	11.0	2.72	37	19	08	34	26	12	25	-05	(81)							
10. Significance	2	11.3	2.48	25	12	04	35	32	10	31	-06	58	(61)						
11. Impact	2	11.2	2.25	15	17	11	32	30	10	29	-01	46	66	(51)					
12. Feedback	2	10.9	2.27	08	21	14	22	24	11	26	-01	32	40	59	(69)				
13. Completeness	2	10.0	2.88	-1	07	11	23	20	06	23	-01	29	42	46	42	(67)			
14. Freedom	3	14.8	4.23	27	17	12	20	13	12	22	42	42	36	32	39	(85)			
15. Variety	3	14.5	3.76	38	27	19	31	27	20	31	-03	54	40	35	35	19	50	(73)	
16. Interdependence	2	10.7	2.59	28	28	10	26	32	19	28	-03	57	41	39	30	18	25	41	(75)

^aCorrelations $\geq .10$ are significant ($p \leq .05$); all decimals have been omitted; N=426

Note: Social Env. = Social Environment, Physical Env. = Physical Environment, Org. Involvement = Organizational Involvement
Internal consistencies are shown in parentheses in the diagonal.

TABLE 2
Canonical Variate Analysis

Canonical Correlation N = 420

(1) .605 p<.01

(2) .464 p<.01

		<u>Correlations with Canonical Variables</u>	
<u>Dependent Variables</u>		I	II
Job Characteristics:			
Unpredictability		-.380	-.678
Significance		-.236	-.476
Impact		-.305	-.193
Feedback		-.358	-.016
Completeness		-.118	.059
Freedom		-.337	-.446
Variety		-.532	-.605
Interdependence		-.514	-.397
Job Involvement		-.487	-.423
Org. Involvement		-.407	-.281
Trust		-.831	.197
Satisfaction		-.784	.012
Expectations		-.138	.176
<u>Independent Variables</u>	variance accounted for	(.217)	(.137)
Organizational level		-.349	-.931
Physical Environment		-.464	.045
Privacy		-.352	-.202
Social Environment		-.984	.133
	variance accounted for	(.131)	(.050)

Table 3
Hierarchical Regression Analysis by Service Area^a

<u>Dependent Variables</u>			<u>Independent Variables</u>			
<u>Service Area A</u>	<u>F(4,80)</u>	<u>R²</u>	<u>Increment in R²</u>			
			<u>Social</u>	<u>Level</u>	<u>Physical</u>	<u>Privacy</u>
Job Characteristics	4.10	.17	.08	.08		
Job Involvement	4.13	.17	.14			
Org. Involvement	4.13	.17	.12			
Trust	24.22	.55	.53			
Satisfaction	11.06	.36	.29			.05
<u>Service Area B</u>	<u>F(4,81)</u>					
Job Characteristics	5.28	.21	.08	.08		
Trust	8.19	.29	.26			
Satisfaction	8.81	.30	.29			
<u>Service Area C</u>	<u>F(4,27)</u>					
Job Involvement	3.80	.36		.31		
Org. Involvement	3.45	.34				.19
Trust	3.31	.33	.27			
<u>Service Area D</u>	<u>F(4,41)</u>					
Job Involvement	2.58	.20		.08		

^aOnly significant ($p < .05$) results are shown

Table 4
Hierarchical Regression Analysis by Location^a

<u>Dependent Variables</u>			<u>Independent Variables</u>			
<u>Building A</u>	<u>F(4,120)</u>	<u>R²</u>	<u>Increment in R²</u>			
			<u>Social</u>	<u>Level</u>	<u>Physical</u>	<u>Privacy</u>
Job Characteristics	6.38	.17	.07	.10		
Job Involvement	8.31	.22	.10	.09		
Org. Involvement	5.82	.16	.10	.05		
Trust	21.71	.42	.41			
Satisfaction	11.30	.27	.20		.04	
<u>Building B</u>	<u>F(4,44)</u>					
Job Characteristics	3.26	.23		.09		
Job Involvement	3.53	.24		.13		
Trust	2.43	.18	.09		.08	
Satisfaction	2.80	.20			.09	
<u>Building C</u>	<u>F(4,28)</u>					
Trust	2.71	.28	.13		.11	
Satisfaction	2.87	.29	.16		.12	

^aOnly significant ($p < .05$) results are shown